
Curriculum Vitae

Jasmine A. Luzum (formerly Talameh), PharmD, PhD, BCPS

CONTACT INFORMATION

University of Michigan
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EMPLOYMENT

Assistant Professor

University of Michigan College of Pharmacy – Ann Arbor, MI
Department of Clinical Pharmacy

2016-Present

Adjunct Assistant Professor

Ohio State University College of Medicine – Columbus, OH
Department of Biological Chemistry & Pharmacology

2016-Present

Adjunct Research Scientist

Henry Ford Health System – Detroit, MI
Center for Individualized and Genomic Medicine Research (CIGMA)

2017-Present

EDUCATION

Post-Doctoral Fellowship

Ohio State University College of Medicine – Columbus, OH
American Heart Association and American Board of Clinical Pharmacology Fellowship
Research Project: “Racial Disparities in Heart Failure Clinical Outcomes: Discovery of Genetic Markers for High-Risk African-Americans”
Co-Mentors: Joseph Kitzmiller, MD, PhD, FCP and Wolfgang Sadee, Dr.rer.nat.

2013-2016

Doctor of Philosophy in Pharmaceutical Sciences

University of North Carolina Eshelman School of Pharmacy - Chapel Hill, NC
American Foundation for Pharmaceutical Education Fellowship
Dissertation: “Genetic and Pharmacogenetic Associations with Heart Failure Patient Survival”
Dissertation Committee: Herb Patterson, PharmD, Howard McLeod, PharmD, Kirkwood Adams, MD, Craig Lee, PharmD, PhD, Jo Ellen Rodgers, PharmD

2008-2013

Doctor of Pharmacy *Summa Cum Laude*

University of Pittsburgh School of Pharmacy - Pittsburgh, PA

2002-2008

RESEARCH INTERESTS

- Cardiovascular pharmacogenetics
 - Heart failure medications
 - Statins
 - Drug-induced QT prolongation
- Racial disparities in cardiovascular drug responses
 - Heart failure medications
 - Role of genomics
- Implementation of pharmacogenomics into clinical practice
 - Guideline recommendations
 - Clinical pharmacogenetic education
 - Cost effectiveness and reimbursement
- Modeling approaches for multiple pharmacogenetic markers
 - GWAS
 - Polygenic scores
 - Machine learning

RESEARCH FUNDING

Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (Parent F32)

Sponsor: NIH

Title: Bleeding on Direct Oral Anticoagulants: Identification of Genetic Risk Factors and a Polygenic Predictive Score in Patients with Atrial Fibrillation

Role: Primary Mentor

PI: Alessandra Campos Staffico

Number: n/a

Period: (submitted April 2021)

Postdoctoral Translational Scholars Program (PTSP)

Sponsor: Michigan Institute for Clinical and Health Research (MICHHR)

Title: Bleeding on Direct Oral Anticoagulants: Identification of Genetic Risk Factors and a Polygenic Predictive Score in Patients with Atrial Fibrillation

Role: Primary Mentor

PI: Alessandra Campos Staffico

Number: n/a

Period: (submitted February 2021)

Postdoctoral Fellowship in Translational Medicine

Sponsor: PhRMA Foundation

Title: Bleeding on Direct Oral Anticoagulants: Identification of Genetic Risk Factors and a Polygenic Predictive Score in Patients with Atrial Fibrillation

Role: Primary Mentor

PI: Alessandra Campos Staffico

Number: n/a

Status: Not funded

Breast Cancer Research Program Breakthrough Level 2

Sponsor: Department of Defense

Title: “ApoE variants in the cardiotoxicity of breast cancer treatment”

Role: Collaborator

PI: Nanette Bishopric

Pre-application #: BC210516

Period: (submitted LOI March 2021)

Embedded Writing Specialist Grant

Sponsor: University of Michigan ADVANCE program

Title: n/a (The purpose of this award is to support the hiring of a writing specialist for my lab.)

Role: Principal Investigator

Institution: University of Michigan

Period: 2/22/21 – 2/22/22

MCubed Collaborative Grant

Sponsor: University of Michigan

Title: “Translational study of valproic acid for treating myocardial infarction”

Role: Co-Investigator

Institution: University of Michigan

Number: n/a

Period: 2/11/2019 – 05/31/2021

Career Development Award

Sponsor: National Heart, Lung, and Blood Institute (NHLBI)

Title: “Precision Medicine for Heart Failure: The Role of Genomics in the Efficacy and Racial Disparity of Cornerstone Pharmacotherapy”

Role: Principal Investigator

Primary Mentor: David E. Lanfear

Institution: University of Michigan

Number: 1K08HL146990-01

Period: 4/1/2019 - 3/31/2024

Career Development Award

Sponsor: American Heart Association

Title: “Precision Medicine for Heart Failure: The Role of Genomics in the Efficacy and Racial Disparity of Cornerstone Pharmacotherapy”

Role: Principal Investigator

Primary Mentor: David E. Lanfear

Institution: University of Michigan

Number: n/a; (awarded but had to decline because of overlap with the NIH K08 award)

Futures Grant

Sponsor: American College of Clinical Pharmacy Research Institute

Title: “Precision Medicine for Heart Failure: The Role of Genomics in the Efficacy and Racial Disparity of Cornerstone Pharmacotherapy”

Role: Principal Investigator

Period: 9/15/2018 – 3/31/20

Institution: University of Michigan

Number: n/a

NIH Clinical Research Student Loan Repayment Program

Sponsor: National Heart, Lung, and Blood Institute (NHLBI)

Title: “Precision Medicine for the Recovery of Anthracycline-Induced Cardiotoxicity:

A Pharmacogenetic Investigation of Carvedilol”

Role: Principal Investigator

Institution: University of Michigan

Mentor: James Rae

Period: 7/2018-6/2020

Number: L30 HL110279-03

Summer Immersion Program

Sponsor: Michigan Institute for Clinical & Health Research (MICHHR)

Title: n/a – this competitive program provided a stipend for a pharmacy student, Joseph English, to do a summer research project in my lab

Role: Principal Investigator

Period: 5/2018 – 8/2018

Institution: University of Michigan

Number: n/a

New Investigator Award

Sponsor: American Association of Colleges of Pharmacy (AACCP)

Title: “Addressing Racial Disparity in Heart Failure Clinical Outcomes and Beta-Blocker Response: Investigation of a Novel Beta-1 Adrenergic Receptor Regulatory Polymorphism in African-Americans”

Role: Principal Investigator

Period: 2/2018 – 2/2019

Institution: University of Michigan

Number: n/a

Collaborative Research Pilot Grant

Sponsor: Michigan Institute for Clinical & Health Research (MICHHR)

Title: Precision Medicine for the Recovery of Chemotherapy-Induced Cardiotoxicity: A Pharmacogenetic Investigation of Carvedilol

Role: Co-Principal Investigator

Period: 7/2018-6/2020

Institution: University of Michigan

Number: n/a

Startup Package

Sponsor: University of Michigan College of Pharmacy

Title: Cardiovascular Pharmacogenomics

Role: Principal Investigator

Period: 7/2016-6/2021

Institution: University of Michigan

Number: n/a

NIH Clinical Research Student Loan Repayment Program

Sponsor: National Heart, Lung, and Blood Institute (NHLBI)

Title: Racial Disparities in Heart Failure Clinical Outcomes: Discovery of Genetic Markers for High-Risk African-Americans

Role: Principal Investigator

Institution: Ohio State University

Mentor: Wolfgang Sadee

Period: 7/2015-6/2017

Number: L30 HL110279-02

Post-Doctoral Fellowship

Sponsor: American Heart Association

Title: Racial Disparities in Heart Failure Clinical Outcomes: Discovery of Genetic Markers for High-Risk African-Americans

Role: Principal Investigator (Post-Doctoral Fellow)

Institution: Ohio State University

Co-Mentors: Wolfgang Sadee and Joseph Kitzmiller Period: 7/2014-6/2016

Number: 14POST20100054

NIH Clinical Research Student Loan Repayment Program

Sponsor: National Heart, Lung, and Blood Institute

Title: Genetic and Pharmacogenetic Associations in Patients with Heart Failure

Role: Principal Investigator

Institution: University of North Carolina at Chapel Hill

Mentor: Herb Patterson

Period: 7/2011-6/2013

Number: L30 HL110279-01

Pre-Doctoral Fellowship

Sponsor: American Foundation for Pharmaceutical Education

Title: Genetic and pharmacogenetic associations of the sympathetic adrenergic system and renin-angiotensin-aldosterone system in patients with heart failure.

Role: Principal Investigator (Pre-Doctoral Fellow)

Institution: University of North Carolina at Chapel Hill

Mentor: Herb Patterson

Period: 9/2010-8/2012

Number: N/A

Kathryne A. Brewington Graduate Student Research Award

Sponsor: University of North Carolina Eshelman School of Pharmacy

Title: Genetic and Pharmacogenetic Associations in Patients with Heart Failure

Role: Principal Investigator

Institution: University of North Carolina at Chapel Hill

Mentor: Herb Patterson

Period: 12/2011-05/2012

Number: N/A

Pilot Grant

Sponsor: North Carolina Translational and Clinical Sciences Institute (NC TraCS)

Title: Association of genetic polymorphisms in the sympathetic adrenergic and renin-angiotensin-aldosterone systems with survival in patients with heart failure

Role: Principal Investigator

Institution: University of North Carolina at Chapel Hill

Co-Investigators: Herb Patterson, Kirkwood F. Adams, Jr., Howard McLeod, Janelle Hoskins, and Todd Schwartz

Period: 2/2010-1/2011

Number: #10KR51038

First Year Graduate School Fellowship

Sponsors: Rho Chi, Allergan Foundation, American Foundation for Pharmaceutical Education

Role: Principal Investigator (First Year Graduate School Fellow)

Institution: University of North Carolina at Chapel Hill

Mentor: Robert Gibbs

Period: 9/2008-8/2009

Number: N/A

Undergraduate Research Scholarship

Sponsors: American Foundation for Pharmaceutical Education and Ortho-McNeil
Pharmaceutical Gateway to Research Scholarship

Title: Effects of systemic administration of anastrozole on aromatase activity in rat brain, basal forebrain cholinergic neurons, and on cognitive performance.

Role: Principal Investigator (Undergraduate Research Scholar)

Institution: University of Pittsburgh

Mentor: Robert Gibbs

Period: 5/2005-5/2006

Number: N/A

Undergraduate Research Scholarship

Sponsor: University of Pittsburgh School of Pharmacy Graduate Education and Research at the University of Pittsburgh [GEAR UP] Scholarship

Title: Effects of estrogen replacement on the number of cholinergic neurons expressing pMEK in the basal forebrain of ovariectomized rats.

Role: Principal Investigator (Undergraduate Research Scholar)

Institution: University of Pittsburgh

Mentor: Robert Gibbs

Period: 6/2004 to 8/2004

Number: N/A

PUBLICATIONS

(*corresponding author)

Manuscripts

1. ***Luzum JA**, Edokobi O, Dorsch MP, Peterson E, Liu B, Gui H, Williams LK, and Lanfear DE. Survival Association of Angiotensin Inhibitors in Heart Failure with Reduced Ejection Fraction: Comparisons Using Self-Identified Race and Genomic Ancestry. *Journal of Cardiac Failure*. 2021. [in revision]
2. ***Luzum JA**, Petry N, Taylor AK, Van Driest SL, Dunnenberger HM, and Cavallari LH. Moving Pharmacogenetics into Practice: It's All About the Evidence! *Clinical Pharmacology & Therapeutics*. 2021. [in revision] Roles: Writing, Critical Review, and Corresponding Author
3. Debbs J, Hannawi B, Peterson E, Gui H, Zeld N, **Luzum JA**, Sabbah HN, Snider J, Pinto Y, Williams LK, and Lanfear DE. Comparison of aptamer-based array to enzyme-linked immunosorbent assays measurements of soluble suppressor of tumorigenicity (ST2) and N-terminal pro-B-type natriuretic peptide (NTproBNP) in heart failure patients. *Journal of Cardiac Failure*. 2021. [in review] Roles: Critical Review
4. Shugg TS, Pasternak AL, ***Luzum JA**. Comparison of Clinical Pharmacogenetic Recommendations Across Therapeutic Areas. *Pharmacogenetics and Genomics*. 2021. [in review] Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author
5. O'Sullivan JW, Raghavan S, Marquez-Luna C, **Luzum JA**, Damrauer S, Ashley E, O'Donnell CJ, Willer C, and *Natarajan P. Polygenic Risk Scores for Cardiovascular Disease: A Scientific Statement from the American Heart Association. *Circulation: Genomics and Precision Medicine*. 2021. [in administrative review with AHA] Roles: Writing and Critical Review
6. Campos-Staffico AM, Cordwin D, Murthy VL, Dorsch MP, ***Luzum JA**. Comparative Performance of the Two Pooled Cohort Equations for Predicting Atherosclerotic Cardiovascular Disease. *Atherosclerosis*. 2021. [in revision] Roles: Design, Writing, Critical Review and Corresponding Author
7. Chen W, Ochs-Balcom HM, Ma C, Isackson PJ, Vladutiu GD, ***Luzum JA**. Evaluating Coenzyme Q10 Therapy in Patients Experiencing Statin Associated Muscle Symptoms. *Medical Science Monitor*. 2021 [in review] Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author
8. *Patel JN, Jiang C, Owzar K, Mulkey F, **Luzum JA**, Mamon HJ, Swanson RS, Haller DG, Dragovich T, Alberts SR, Bjarnason G, Willet CG, Niedzwiecki D, Enzinger P, Ratain MJ, Fuchs C, McLeod HL. Pharmacogenetic Study in Gastric Cancer Patients Treated with Adjuvant Fluorouracil/Leucovorin or Epirubicin/Cisplatin/Fluorouracil Before and After

- Chemoradiation on CALGB 80101 (Alliance). *Pharmacogenetics and Genomics*. 2021. [in press] Roles: Analysis, Critical Review
9. Gui H, Tang WWH, Francke S, Li J, She R, Bazeley P, Pereira N, Adams KF, **Luzum JA**, Hernandez AF, McNaughton CD, Williams LK, and *Lanfear DE. Common variants on *FGD5* increase hazard of mortality or re-hospitalization in heart failure patients from ASCEND-HF trial. *Cardiovascular Research*. 2021 [in revision] Roles: Design, Writing, Critical Review
 10. *Lanfear DE and **Luzum JA**. BNP and Precision Medicine: Tip of an Iceberg. *JACC: Basic to Translational Science*. 2021. [in press] Roles: Writing and Critical Review
 11. Campos-Staffico AM, Cordwin D, Ding Y, Lester CA, Brook RD, **Luzum JA**, and *Dorsch MP. Fewer Patients Receive Recommendations for Primary Prevention Using the 2018 Atherosclerotic Cardiovascular Disease Risk Estimator. *Preventive Medicine*. 2021. Apr 20;148:106555. PMID: 33862035 [Online ahead of print] Roles: Design, Writing, Critical Review
 12. Gui H, She R, **Luzum JA**, Li J, Bryson TD, Pinto Y, Sabbah HN, Williams LK, *Lanfear DE. Plasma Proteomic Profile Predicts Survival in Heart Failure with Reduced Ejection Fraction. 2020. *Circulation: Genomics and Precision Medicine*. [in press] Roles: Critical Review
 13. Lopez Medina AI and ***Luzum JA**. Genetics of Drug-Induced QT Prolongation: A Focus on Cardiac Ion Channels. *Clinical Pharmacology & Therapeutics*. 2021. [in revision] Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author
 14. Lopez Medina AI, Campos Staffico AM, and ***Luzum JA**. QT Prolongation with Hydroxychloroquine and Azithromycin for the treatment of COVID-19: The Need for Pharmacogenetic Insights. *Journal of Cardiovascular Electrophysiology*. 2020; 31(10):2793-2794. PMID: 32870576 Roles: Conceptualization, Writing, Critical Review and Corresponding Author
 15. Takahashi T, **Luzum JA**, Nicol MR, *Jacobson PA. Pharmacogenomics of COVID-19 Therapies. *NPJ Genomic Medicine*. 2020; 5:35. PMID: 32864162. Roles: Conceptualization, Design, Writing, Critical Review
 16. *Lanfear DE, **Luzum JA**, She R, Gui H, Donahue MP, O'Connor CM, Adams KF, Sanders-van Wijk S, Zeld N, Maeder MT, Sabbah HN, Kraus WE, Brunner-La Rocca HP, Li J, Williams LK. Polygenic Score for Beta-Blocker Survival Benefit in European Ancestry Patients with Reduced Ejection Fraction Heart Failure. *Circulation: Heart Failure*. 2020; 3(12):e007012. PMID: 33012170. Roles: Design, Writing, Critical Review
 17. Shugg T, Pasternak AL, London B, ***Luzum JA**. Prevalence and Types of Inconsistencies in Clinical Pharmacogenetic Recommendation Among Major U.S. Sources. *NPJ Genomic Medicine*. 2020; 5(1):48. PMID: 33298916 Roles: Conceptualization, Design, Analysis, Writing, Critical Review, and Corresponding Author

18. Linskey DW, English JD, Ochs-Balcom HM, Ma C, Isackson PJ, Vladutiu GD, ***Luzum JA**. Association of *SLCO1B1* T521C (rs4149056) with Discontinuation of Atorvastatin Due to Muscle Adverse Drug Reactions. *Pharmacogenetics and Genomics*. 2020; 30(9):208-211. PMID: 32453264 Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author
19. ***Luzum JA**, Ting C, Peterson E, Gui H, Shugg T, Li L, Sadee W, Wang D, and Lanfear DE. Association of Cardiac-Specific Regulatory Genetic Variants for Protein Kinase C α with Mortality in Patients with Heart Failure. *Cardiovascular Drugs and Therapy*. 2019;33(6):693-700. [PMID: 31728800] Roles: Design, Writing, Critical Review
20. ***Luzum JA**, English JD, Ahmad U, Sun JW, Canan BD, Sadee W, Kitzmiller JP, and Binkley PF. Association of Genetic Polymorphisms in the Beta-1 Adrenergic Receptor with Recovery of Left Ventricular Ejection Fraction in Patients with Heart Failure. *Journal of Cardiovascular Translational Research*. 2019. 12(4):280-289. [PMID: 30756358 and PMCID: PMC6690812] Roles: Design, Analysis, Writing, Critical Review
21. Ochs-Balcom HM, Minh L, Ma C, Isackson PJ, **Luzum JA**, Kitzmiller JP, Tarnopolsky M, Weisman M, Christopher-Stine L, Peltier W, and *Vladutiu GD. Clinical Features Related to Statin-Associated Muscle Symptoms. *Muscle and Nerve*. 2019;59(5):537-543 [PMID: 30549046] Roles: Design, Analysis, Writing, Critical Review
22. ***Luzum JA** and Cheung JC. Does cardiology hold pharmacogenetics to an inconsistent standard? A comparison of evidence among recommendations. *Pharmacogenomics*. 2018;19(15):1203-1216. [PMID: 30196751] Roles: Conceptualization, Design, Writing, Critical Review and Corresponding Author
23. **Luzum JA**, Peterson E, Li J, She R, Pinto YM, Williams LK, Sabbah HN, and *Lanfear DE. Race and beta-blocker survival benefit in patients with heart failure: an investigation of self-reported African American race and African genetic ancestry. *Journal of the American Heart Association*. 2018; 7(10). pii: e007956. [PMID: 29739794] Roles: Design, Analysis, Writing, Critical Review
24. Allyn-Feuer A, Ade A, **Luzum JA**, Higgins GA, and *Athey BD. The Pharmacoeugenomics Informatics Pipeline (PIP) Defines a Pathway of Novel and Known Warfarin Pharmacogenomics Variants. *Pharmacogenomics*. 2018; 19(5):413-434. [PMID: 29400612] Roles: Design and Critical Review
25. Pasternak AL, Ward KM, **Luzum JA**, Ellingrod V, and *Hertz DL. Germline genetic variants with implications for disease risk and therapeutic outcomes. *Physiologic Genomics*. 2017; 49(10):567-581 [PMID: 28887371] Roles: Analysis, Writing, Critical Review
26. *Hertz DL, **Luzum JA**, Pasternak AL, Ward KM, Zhu H, Rae JM, and Ellingrod VL. Institutional Profile of Pharmacogenetics within University of Michigan College of Pharmacy. *Pharmacogenomics*. 2017 Jul 26. doi: 10.2217/pgs-2017-0107. [PMID: 28745551] [Epub ahead of print] Roles: Writing

27. Mukherjee C, Sweet KM, **Luzum JA**, Abdel-Rasoul M, and *Kitzmiller JP. Clinical pharmacogenomics: patient perspectives of pharmacogenomic testing and the incidence of actionable test results in a chronic disease cohort. *Personalized Medicine*. 2017;14(5):383-388. [PMID: 29181084] Roles: Conceptualization, Design, Analysis, Critical Review
28. **Luzum JA**, Pakyz RE, Elsey AR, Haidar CE, Peterson JF, Whirl-Carrillo M, Handelman SK, Palmer K, Schildcrout JS, Pulley JM, Beller M, Field JR, Weitzel KW, Cooper-DeHoff RM, Cavallari LH, O'Donnell PH, Pereira N, Ratain MJ, Roden DM, Embi PJ, Sadee W, Klein TE, Johnson JA, Relling MV, Wang L, Weinshilboum RM, Shuldiner AR, *Freimuth RR, for the Pharmacogenomics Research Network Translational Pharmacogenetics Program. The Pharmacogenomics Research Network Translational Pharmacogenetics Program: Outcomes and Metrics of Pharmacogenetic Implementations Across Diverse Healthcare Systems. *Clinical Pharmacology & Therapeutics*. 2017;102(3):502-510 [PMID: 28090649; PMCID: PMC5511786] Roles: Design, Analysis, Writing, Critical Review
29. ***Luzum JA**, Sweet K, Binkley PF, Sadee W, and Kitzmiller JP. *CYP2D6* Genetic Variation and Beta-Blocker Maintenance Dose in Patients with Heart Failure. *Pharmaceutical Research*. 2017;34(8):1615-1625. [PMID: 28181117; PMCID: PMC5500390] Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author
30. *Kitzmiller JP, **Luzum JA**, Dauki AM, Krauss RM, and Medina MW. Candidate-Gene Study of Functional Polymorphisms in *SLCO1B1* and *CYP3A4/5* and the Cholesterol-Lowering Response to Simvastatin. *Clinical and Translational Science*. 2017;10(3):172-177. [PMID: 28482130] Roles: Design, Analysis, Writing, Critical Review
31. *Kitzmiller JP, Mikulik E, Dauki A, Murkherjee C, and **Luzum JA**. Pharmacogenomics of statins: understanding susceptibility to adverse effects. *Pharmacogenomics and Personalized Medicine*. 2016;9:97-106. [PMID: 27757045] Roles: Critical Review
32. **Luzum JA** and Lanfear DE*. Pharmacogenetic Risk Scores for Perindopril Clinical and Cost Effectiveness in Stable Coronary Artery Disease: When are we ready to implement? *Journal of the American Heart Association*. 2016;5(3): pii: e003440. [PMID: 27021567] Roles: Design, Analysis, Writing, and Critical Review
33. ***Luzum JA** and Luzum MJ. Physicians' Attitudes Toward Pharmacogenetic Testing Before and After Pharmacogenetic Education. *Personalized Medicine*. 2016;13(2): 119-127. Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author [PMID: 29749904]
34. ***Luzum JA**, Kitzmiller JP, Isackson PJ, Ma CX, Medina MW, Dauki AM, Mikulik EB, Ochs-Balcom HM, and Vladutiu GD. *GATM* polymorphism associated with the risk for statin-induced myopathy does not replicate in case-control analysis of 715 dyslipidemic individuals. *Cell Metabolism*. 2015; 21(4):622-7. [PMID: 25863251] Roles: Design, Analysis, Writing, Critical Review and Corresponding Author

35. ***Luzum JA**, Theusch E, Taylor KD, Wang A, Sadee W, Binkley PF, Krauss RM, Medina MW, and Kitzmiller JP. Individual and combined associations of genetic variants in *CYP3A4*, *CYP3A5*, and *SLCO1B1* with simvastatin and simvastatin acid plasma concentrations. *Journal of Cardiovascular Pharmacology*. 2015; 66(1):80-5. [PMID: 26164721] Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author
36. *Kitzmiller JP, Barnett CJ, Steiner NS, Stoicea N, Kamar N, **Luzum JA**, Mikulik E, and Bergese SD. Buprenorphine: Revisiting the Efficacy of Transdermal Delivery System. *Therapeutic Delivery*. 2015;6(4):419-422. [PMID: 25996041] Roles: Critical Review
37. Wang J, ***Luzum JA**, Phelps MA, and Kitzmiller JP. Liquid chromatography-tandem mass spectrometry assay for the simultaneous quantification of simvastatin, lovastatin, atorvastatin, and their major metabolites in human plasma. *Journal of Chromatography B*. 2015;983-984:18-25. [PMID: 25612772] Roles: Writing, Critical Review and Corresponding Author
38. *Kitzmiller JP, **Luzum JA**, Baldassarre D, Krauss RM, and Medina MW. *CYP3A4*22* and *CYP3A5*3* are associated with increased levels of plasma simvastatin concentrations in the Cholesterol and Pharmacogenetics study cohort. *Pharmacogenetics and Genomics*. 2014;24(10):486-91. [PMID: 25051018] Roles: Design, Analysis, Writing, and Critical Review
39. ***Talameh JA** and Kitzmiller JP. Pharmacogenetics of Statin-Induced Myopathy: A focused review of the clinical translation of pharmacokinetic genetic variants. *Journal of Pharmacogenomics & Pharmacoproteomics* 2014;5(2):128-25. [PMID: 25221728] Roles: Design, Analysis, Writing, Critical Review and Corresponding Author
40. McNeely EB, **Talameh JA**, Adams KF, Hull JH, Simmons B, Henry J, Brouwer KLR, and *Patterson JH. Relative oral bioavailability of tolvaptan administered via nasogastric tube and tolvaptan tablets swallowed intact. *American Journal of Health-System Pharmacy*. 2013;70(14): 1230-1237. [PMID: 23820460] Roles: Design, Analysis, Writing, and Critical Review
41. Hertz DL, Crona DJ, **Talameh J**, Brantley SJ, Roode L, Theken KN, and Hull JH. Integration of scientific writing into an applied biostatistics and SAS programming course for Pharmaceutical Sciences graduate students. *Proceedings of the 20th Annual Southeast SAS Users Group Conference*. 2012. Accessible at: <http://analytics.ncsu.edu/sesug/2012/PO-11.pdf> Roles: Critical Review
42. **Talameh JA**, McLeod H, Adams KF, and *Patterson JH. Genetic Tailoring of Pharmacotherapy in Heart Failure: Optimize the old, while we wait for something new. *Journal of Cardiac Failure*. 2012;18(4):338-49. [PMID: 22464776] Roles: Conceptualization, Design, Analysis, Writing, and Critical Review
43. ***Talameh JA**, Misher A, Hoskins J. A capillary electrophoresis method for genotyping the 9 bp exon 1 insertion/deletion in *BDKRB2*. *Pharmacogenomics*. 2012;13(3):353-8. [PMID:

22304584] Roles: Conceptualization, Design, Analysis, Writing, Critical Review and Corresponding Author

44. **Talameh JA**, *Lanfear D. Pharmacogenetics in Chronic Heart Failure: New developments and current challenges. *Current Heart Failure Reports*. 2012;9(1):23-32. [PMID: 22135185] Roles: Design, Analysis, Writing, and Critical Review
45. **Talameh JA**, *McLeod H. *PON1* Q192R and Clopidogrel: A case of the winner's curse or inadequate replication? *Clinical Pharmacology & Therapeutics*. 2011;90(6):771-4. [PMID: 22089342] Roles: Design, Analysis, Writing, and Critical Review
46. ***Talameh JA**, Rezk NL, Kashuba AD. Quantifying the HIV-1 integrase inhibitor raltegravir in female genital tract secretions using high-performance liquid chromatography with ultraviolet detection. *Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences*. 2010;878(1):92-6. [PMID: 19942487] Roles: Analysis and Writing
47. *Gibbs RB, Edwards D, Lazar N, Nelson D, and **Talameh J**. Effects of long-term hormone treatment and of tibolone on monoamines and monoamine metabolites in the brains of ovariectomised, cynomolgous monkeys. *Journal of Neuroendocrinology*. 2006;18(9):643-654. [PMID: 16879163] Roles: Analysis

Published Abstracts

1. **Luzum JA**, Peterson E, Li J, She R, Gui H, Liu B, Williams LK, Sabbah HN, and Lanfear DE. Comparison of Survival Benefit from Angiotensin Inhibitors in Patients with Heart Failure and Reduced Ejection Fraction by Race and Genomic Ancestry. *Circulation*. 2020;142:A15985.
2. Michaels AT, Peterson E, **Luzum JA**, Gui H, Pinto Y, Sabbah HN, Williams LK, Snider J, Lanfear DE. Biomarker Guided Therapy For Heart Failure With Mid-Range EF. *Journal of Cardiac Failure*. 2020; 26(10 Supplement): s37. Roles: Critical Review
3. Campos-Staffico A, Cordwin D, Ding Y, Lester C, Brook R, **Luzum JA**, and Dorsch MP. Fewer patients receive recommendations for primary drug prevention using the 2018 atherosclerotic cardiovascular disease risk estimator. *Journal of the American College of Clinical Pharmacy*. 2020; 3(8): 1540. Roles: Critical Review
4. Debbs J, Bryson TD, Zeld N, Aurora L, Gui H, **Luzum JA**, Peterson E, She R, Williams LK, and Lanfear DE. Somalogic ST2 and NT Pro-BNP assays predict heart failure mortality as effectively as the ELISA assay. *Journal of the American College of Cardiology*. 2020; 75 (11); Supplement 1: 1091. Roles: Critical Review
5. Bryson T, Debbs JC, She R, Gui H, **Luzum JA**, Zeld N, Brawner CA, Keteyian SJ, Ehrman JK, Williams LK, and Lanfear DE. A single nucleotide polymorphism within the RXRA gene predicts a favorable response to exercise in heart failure. *Journal of the American College of Cardiology*. 2020; 75 (11); Supplement 1: 1012. Roles: Critical Review

6. Shugg T and **Luzum JA**. Discrepancies in Clinical Guidance to Manage Drug-Gene Interactions: Analysis of Recommendations From Prominent U.S. Guidance Sources. *Journal of the American College of Clinical Pharmacy*. February 3, 2020. 3(1): 288. Roles: Conceptualization, Design, Analysis, Writing, Critical Review
7. Mahoney RC, Kitzmiller JP, Ochs-Balcom HM, Isackson PJ, Ma C, Vladutiu GD, and **Luzum JA**. Machine Learning to Discover Novel Drug-Drug Interactions Associated With Statin Associated Muscle Symptoms. *Journal of the American Pharmacists Association*. July-August 2019; 59: e248. Roles: Conceptualization, Design, Analysis, Writing, Critical Review
8. **Luzum JA**, Musani SK, Mwasongwe SE, Peterson EL, and Lanfear DE. Addressing Racial Disparity in Heart Failure Outcomes and Beta-Blocker Response. *American Journal of Pharmaceutical Education*. June 2019. 83 (5); 7654. Roles: Conceptualization, Design, Analysis, Writing, Critical Review
9. Shugg T, Li J, She R, Gui H, Sabbah HN, Williams LK, **Luzum JA**, and Lanfear DE. Genome-Wide Association Study of Mortality Benefit from Beta-Blockers in Patients With Heart Failure With Reduced Ejection Fraction. *Journal of the American College of Cardiology*. March 12, 2019. 73 (9 Supplement 1): 1005. Roles: Writing, Critical Review
10. **Luzum JA**, Ting C, Peterson E, Gui H, Li L, Sadee W, Wang D, and Lanfear DE. A Cardiac-Specific Regulatory Genetic Variant for Protein Kinase C α is Significantly Associated with Mortality in Patients with Heart Failure. *Journal of Cardiac Failure*. August 2018. 24 (8); S2. Roles: Conceptualization, Design, Writing, Critical Review
11. **Talameh J**, Garrand A, Ghali JK, Oren R, Dunlap SH, Van Bakel AB, Piña IL, Patterson JH, Sueta CA, McGrew F, Miller A, Schwartz TA, and Adams Jr KF. Beta-1 Adrenergic Receptor Genotype Ser49Gly Is Associated with Beta-Blocker Survival Benefit in Patients with Heart Failure. *Journal of the American College of Cardiology*. 2012;59(13 Suppl):E861. Roles: Analysis, Writing, and Critical Review
12. McNeely, EB, Hull, JH, Adams, KF, **Talameh, J**, Simmons, B, Henry, J, Brouwer, KLR, and Patterson, JH. Comparison of the relative oral bioavailability of tolvaptan administered via nasogastric tube to tolvaptan tablets swallowed intact. *Pharmacotherapy*. 2012;32(5):E114. Roles: Design, Analysis, Writing, and Critical Review

ACKNOWLEDGEMENTS

American Society of Health System Pharmacist (ASHP) Statement on the Pharmacist's Role in Clinical Pharmacogenomics. 2021. (Reviewer). <https://www.ashp.org/-/media/assets/house-delegates/docs/statement-pharmacist-role-pharmacogenomics.ashx>

RESEARCH AWARDS

- My PharmD student's (Derek Linksey) poster was awarded an Honorable Award 2020
at the Pharmacogenomics Research Network Meeting
- My post-doc Tyler Shugg's abstract was selected for a travel award and 2019
continuing education at the American College of Clinical Pharmacy (ACCP)
Annual Meeting
- Rising Star Award from the University of Pittsburgh School of Pharmacy 2019
 - *Recognizes alumni of the University of Pittsburgh School of
Pharmacy that are making great achievements while still
early in their careers.*
- Finalist for the Jay N. Cohn New Investigator Award 2018
from the Heart Failure Society of America (HFSA)
- Pharmacist Travel Award from the Heart Failure Society of America (HFSA) 2018
- NIH Loan Repayment Program Ambassador Spotlight (May) 2018
- Pharmacogenomics Research Network Monthly Featured Investigator (August) 2017
(<http://www.pgrn.org/featured-investigators>)
- 3rd Place Post-Doctoral Research Poster at the Ohio State University 2013
Davis Heart and Lung Research Institute Poster Competition
- Impact Award – UNC-Chapel Hill 2013
 - *Recognizes graduate students whose research directly contributes to the
educational, economic, physical, social or cultural well-being of North Carolina
citizens in the near future*
- Boka W. Hadzija Award for Distinguished University Service – UNC-Chapel Hill 2012
 - *Recognizes a graduate or professional student with outstanding character,
scholarship, leadership, and service to the University. Only one student per year
receives this award*
- Kathryn A. Brewington Graduate Student Research Award 2011
 - *Given annually to the most outstanding doctoral student in the Pharmaceutical
Sciences PhD program at the University of North Carolina Eshelman School of
Pharmacy*

RESEARCH PRESENTATIONS

Podium

(presenting author underlined)

1. Shugg T and **Luzum JA**. Discrepancies in Clinical Guidance to Manage Drug-Gene Interactions: Analysis of Recommendations From Prominent U.S. Guidance Sources. *American College of Clinical Pharmacy Annual Meeting*. New York, NY. October 22-26, 2019

2. Perry DA, Kitzmiller JP, Ochs-Balcom HM, Isackson PJ, Ma C, Vladutiu GD, and **Luzum JA**. Atorvastatin may be Associated with a Lower Risk of Discontinuation due to Muscle Pain and/or Weakness Compared with Other Statins. *University of Michigan Health System Department of Internal Medicine Research Symposium*. Ann Arbor, MI May 10, 2019.
3. Mahoney RC, Kitzmiller JP, Ochs-Balcom HM, Isackson PJ, Ma C, Vladutiu GD, and **Luzum JA**. Machine Learning to Discover Novel Drug-Drug Interactions Associated With Statin Associated Muscle Symptoms. *American Pharmacists Association Annual Meeting*. Seattle, WA March 22-25, 2019.
4. **Luzum JA**, Ting C, Peterson E, Gui H, Li L, Sadee W, Wang D, and Lanfear DE. A Cardiac-Specific Regulatory Genetic Variant for Protein Kinase C α is Significantly Associated with Mortality in Patients with Heart Failure. *Heart Failure Society of America Annual Meeting*, Nashville, TN, September 17, 2018.
5. **Talameh J**, Garrand A, Ghali JK, Oren R, Dunlap SH, Van Bakel AB, Piña IL, Patterson JH, Sueta CA, McGrew F, Miller A, Schwartz TA, and Adams Jr KF. Beta-1 Adrenergic Receptor Genotype Ser49Gly is Associated with Beta-Blocker Survival Benefit in Patients with Heart Failure. *American College of Cardiology Scientific Session*, Chicago, IL, Sunday, March 25, 2012.
6. Jones A, **Talameh J**, Patterson K, Rezk N, Prince H, and Kashuba A. First-dose and steady-state pharmacokinetics of raltegravir in the genital tract of HIV uninfected women. *10th International Workshop on Clinical Pharmacology of HIV Therapy*, Amsterdam, The Netherlands, April 15-17, 2009.

Posters

(presenting author underlined)

1. Lanfear DE, Gui H, Hannawi B, Connolly T, Li J, She R, Pereira N, Adams KF, Hernandez AF, **Luzum JA**, Francke S, Tang WH, and Williams LK. Polygenic Score For Beta-blocker Survival Benefit In Heart Failure With Preserved Ejection Fraction Patients. *Heart Failure Society of America Annual Scientific Meeting*. Virtual. **Date?**
2. Lanfear DE, Gui H, Hannawi B, Connolly T, Li J, She R, Pereira N, Adams KF, Hernandez AF, **Luzum JA**, Francke S, Tang WH, and Williams LK. Pharmacogenomic analyses in ASCEND-HF indicate influence of NPR3 genetics on nesiritide blood pressure effect. *American College of Cardiology Scientific Session*. Atlanta, GA. May 15-17, 2021.
3. Chen W, Ochs-Balcom HM, Vladutiu GD, and **Luzum JA**. Evaluating Coenzyme Q10 Therapy in Participants Experiencing Statin Associated Muscle Symptoms. *American Society for Health-System Pharmacists Midyear Meeting*. (Virtual). December 6-10, 2020.
4. **Luzum JA**, Peterson E, Li J, She R, Gui H, Liu B, Williams LK, Sabbah HN, and Lanfear DE. Comparison of Survival Benefit from Angiotensin Inhibitors in Patients with Heart

Failure and Reduced Ejection Fraction by Race and Genomic Ancestry. *American Heart Association Scientific Sessions*. (Virtual). November 14-16, 2020

5. Campos-Staffico AM, Cordwin D, Ding Y, Lester CA, Brook RD, **Luzum JA**, Dorsch MP. Fewer Patients Receive Recommendations For Primary Drug Prevention Using The 2018 Atherosclerotic Cardiovascular Disease Risk Estimator. *American College of Clinical Pharmacy Annual Meeting*. (Virtual). October 19-30, 2020
6. Linskey DW, Linskey DC, and **Luzum JA**. How often do pharmacogenomic GWAS discover novel variants and genes versus confirm previously known candidates? Pharmacogenomics Research Network Annual Meeting. (Virtual) October 26, 2020.
7. Michaels AT, Peterson E, **Luzum JA**, Gui H, Pinto Y, Sabbah HN, Williams LK, Snider J, Lanfear DE. Biomarker Guided Therapy For Heart Failure With Mid-Range EF. *Heart Failure Society of America Annual Meeting*. (Virtual) September 30-October 6, 2020.
8. Gui H, Bryson TD, She R, Li J, **Luzum JA**, Gibbs J, Zeld N, Pinto Y, Bayes-Genis A, Sabbah HN, Williams LK, Lanfear DE. Genome-wide screening of genetic markers for prognostic human plasma miRNAs in heart failure patients. *Heart Failure Congress*. Barcelona, Spain. May 23-26, 2020.
9. Debbs J, Bryson TD, Zeld N, Aurora L, Gui H, **Luzum JA**, Peterson E, She R, and Lanfear DE. Somologic ST2 and NT pro-BNP Assays Predict Heart Failure Mortality as Effectively as the ELISA Assay. *American College of Cardiology Scientific Session*. Chicago, IL. March 28-30, 2020.
10. Bryson TD, Debbs J, She R, **Luzum JA**, Gui H, Zeld N, Keteyian S, Williams LK, Brawner C, Lanfear DE. A Single Nucleotide Polymorphism Within the *RXRA* Gene Predicts a Favorable Response to Exercise in Heart Failure. *American College of Cardiology Scientific Session*. Chicago, IL. March 28-30, 2020.
11. Cook M, Musani SK, Mwasongwe SE, and **Luzum JA**. The Relationship Between Beta Blocker Dose and the rs11196454 Genetic Variant and Survival in African American Patients with Heart Failure. *American Society of Health System Pharmacists Midyear Meeting*. Las Vegas, NV. December 8-12, 2019.
12. **Luzum JA**, Musani SK, Mwasongwe SE, Peterson EL, and Lanfear DE. Addressing Racial Disparity in Heart Failure Outcomes and Beta-Blocker Response. *American Association of Colleges of Pharmacy Annual Pharmacy Education Meeting*. Chicago, IL July 14, 2019
13. Shugg T, Li J, She R, Gui H, Sabbah HN, Williams LK, **Luzum JA**, and Lanfear DE. Genome-Wide Association Study of Mortality Benefit from Beta-Blockers in Patients With Heart Failure With Reduced Ejection Fraction. *American College of Cardiology Scientific Session*. New Orleans, LA March 16-18, 2018

14. **Perry DA**, Kitzmiller JP, Ochs-Balcom HM, Isackson PJ, Ma C, Vladutiu GD, and **Luzum JA**. Atorvastatin is Associated with the Lowest Risk of Discontinuation due to Muscle Pain or Weakness Compared with Other Statins. *UM Frankel Cardiovascular Center Scientific Symposium*. Ann Arbor, MI, June 7, 2018.
15. **Luzum JA**, Gui H, Peterson EL, Zeld N, Liu B, Sabbah HN, Williams LK, and Lanfear DE. Pharmacogenetic Score is Associated with Effectiveness of Angiotensin Converting Enzyme Inhibitors and Angiotensin Receptor Blockers in Patients with Heart Failure and Reduced Ejection Fraction. *American College of Cardiology Scientific Sessions*. Orlando, FL, March 10-12, 2017. [accepted but withdrawn]
16. **Luzum JA**, Mukherjee C, Sweet KM, Abdel-Rasoul M, and Kitzmiller JP. Pharmacogenetic Testing in Patients with Chronic Cardiovascular Disease: Frequency of Actionable Test Results and Patient Perspectives. *University of Michigan Frankel Cardiovascular Center Scientific Symposium*. Ann Arbor, MI, June 9, 2017.
17. **Luzum JA** and Luzum MJ. Improving Clinicians' Perception of the Clinical Utility of Pharmacogenetics: A Proof-of-Concept Study of Pharmacogenetic Education. *Pharmacogenomics Research Network (PGRN) Meeting*. State College, PA, April 28, 2015.
18. **Talameh JA**, Vladutiu GD, Isackson PJ, Sadee W, and Kitzmiller JP. Evaluation of Genetic Risk Scores for Predicting Statin-Induced Myopathy. *OSU Davis Heart and Lung Research Institute Research Day*. Columbus, OH, October 9, 2013.
19. **Hertz D**, Crona D, Brantley S, **Talameh J**, Theken K, Roode L, and Hull JH. Integration of Scientific Writing into an Applied Biostatistics and SAS Programming Course for Pharmaceutical Sciences Graduate Students. *20th Annual Southeast SAS Users Group Conference*, Durham, NC, October 14-16, 2012.
20. **McNeely EB**, Hull JH, Adams Jr. KF, **Talameh JA**, Simmons B, Henry J, Brouwer KLR, and Patterson JH. Comparison of the relative oral bioavailability of tolvaptan administered via nasogastric tube to tolvaptan tablets swallowed intact. *American College of Clinical Pharmacy Virtual Poster Symposium*, May 22-24, 2012.
21. **Talameh J**, Patterson JH, McLeod H, Hoskins J, Schwartz T, and Adams KF. Association of genetic polymorphisms in the sympathetic adrenergic and renin-angiotensin-aldosterone systems with clinical outcome in heart failure patients. *Globalization of Pharmaceutical Education Network Biennial Meeting*, Chapel Hill, NC, November 10-12, 2010.
22. **Talameh J**, Paine M, Pollack G. A physiologically based pharmacokinetic model of the *ABCB1* 3435T>C polymorphism and digoxin in patients with heart failure. *Personalized Medicine in the 21st Century Symposium*, Durham, NC, June 15, 2010.

23. **Talameh J**, Reynolds M, Kirisci L, Tarter, R. Childhood stress contributes to the liability to develop substance use disorder in adulthood. *17th Annual Society for Prevention Research Meeting*, Washington, DC, May 26-29, 2009.
24. **Talameh J**, Gibbs R. Effects of estrogen replacement on the number of cholinergic neurons expressing pMEK in the basal forebrain. *American Association of Pharmaceutical Scientists U. Michigan- U. Pittsburgh Pharmaceuticals Exchange*- Ann Arbor, MI, April 2005.
25. **Talameh J**, Gibbs R. Effects of estrogen replacement on the number of cholinergic neurons expressing pMEK in the basal forebrain. *26th Annual Pharmacy Student Research Conference*- Eastern States- Morgantown, WV, October 2004.

Seminars

1. “*Race-Based Drug Recommendations in Cardiology: Hypertension Vs Heart Failure*” at the Race in Healthcare Seminar Series at the UM College of Pharmacy, (virtual), April 15, 2021.
2. “*Race-Based Drug Recommendations in Cardiology: Hypertension Vs Heart Failure*” at NEOMED College of Pharmacy, (virtual), April 9, 2021.
3. “*Pharmacogenomics*” at the Great Lakes Pharmacy Conference (panelist), March 20, 2021 (virtual)
4. “*Levels of Evidence for the Clinical Implementation of Pharmacogenomics: An Academic Perspective*” at the American Society of Clinical Pharmacology & Therapeutics (ASCPT) Annual Meeting, (virtual), March 12, 2021.
5. “*Pharmacogenetics in Cardiology Clinical Practice Guidelines*” at the American Medical Association (AMA) and American Society of Health-System Pharmacists (ASHP) Virtual Pharmacogenomics Summit, (virtual), March 5, 2021.
6. “*Race-Based Drug Recommendations in Cardiology: Hypertension Vs Heart Failure*” at the University of Florida Precision Health Seminar Series, (virtual), February 26, 2021.
7. “*Race-Based Drug Recommendations in Cardiology*” at the Morgan State University Interdisciplinary Seminar Series, (virtual), October 29, 2020.
8. “*Does Genetic Variation Affect Heart Failure Patients’ Responses to Beta-Blockers?*” at the University of Michigan College of Pharmacy Clinical Pharmacy and Translational Science Seminar Series, Ann Arbor, MI, September 16, 2019.
9. “*Does Genetic Variation Affect Heart Failure Patients’ Responses to Beta-Blockers?*” at the University of Colorado Skaggs School of Pharmacy, Aurora, CO, August 5, 2019.

10. “*An Introduction to Cardiovascular Pharmacogenetics*” at the Michigan Medicine Heart Failure Conference, Ann Arbor, MI, July 19, 2018.
11. “*Perspectives on Developing a Successful New Investigator Award Application*” (panelist), organized by the American Association of Colleges of Pharmacy (AACP), on July 12, 2018 (virtual)
12. “*Treatment of Chemotherapy-Induced Cardiotoxicity: Are Beta-Blockers Effective for All?*” at the Michigan Medicine Hematology/Oncology Research Conference, Ann Arbor, MI, May 10, 2018.
13. “*An Update on Cardiovascular Pharmacogenetics*” at the Michigan Medicine Heart Failure Conference, Ann Arbor, MI, July 13, 2017.
14. “*Discovery of Effective Pharmacotherapy for Heart Failure with Preserved Ejection Fraction*” at the University of Michigan Department of Computational Medicine and Bioinformatics, Ann Arbor, MI, August 31, 2016.
15. “*A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure*” at the University of Michigan College of Pharmacy, Ann Arbor, MI, January 28, 2016.
16. “*A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure*” at the University of Minnesota College of Pharmacy, Minneapolis, MN, December 15, 2015.
17. “*A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure*” at the Cleveland Clinic Genomic Medicine Institute, Cleveland, OH, December 7, 2015.
18. “*A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure*” at the University of Michigan School of Medicine, Ann Arbor, MI, November 13, 2015.
19. “*A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure*” at the University of Illinois at Chicago College of Pharmacy, Chicago, IL, November 5, 2015.
20. “*Toward the Clinical Implementation of Pharmacogenetics: Beta-Blocker Pharmacogenetics in Heart Failure as an Example*” at the University of California at San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences, San Diego, CA, October 9, 2015.
21. “*A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure*” at Wayne State University College of Pharmacy & Health Sciences, Detroit, MI, August 4, 2015.

22. *"The Gnome Pharmacogenomics Panel: Potential Benefits for Residents of Long-Term Care Facilities"* at Omnicare, Cincinnati, OH, June 9, 2015.
23. *"Research training in the Pharmaceutical Sciences: Let your interests guide you to success"* at the University of Minnesota College of Pharmacy, Minneapolis, MN, May 13, 2015.
24. *"A Journey Across the Translational Research Spectrum: Beta-Blocker Pharmacogenetics in Heart Failure"* at Cincinnati Children's Hospital, Cincinnati, OH, April 8, 2015.
25. *"Cardiovascular Pharmacogenetics"* at the Cardiology Grand Rounds, Ohio State University Wexner Medical Center, Columbus, OH, March 27, 2015.
26. *"Beta-Blocker Pharmacogenetics in Heart Failure"* at the Department of Molecular and Cellular Biochemistry Seminar, Ohio State University, Columbus, OH, October 30, 2014.
27. *"Genetic and Pharmacogenetic Associations with Heart Failure Patient Survival"* at the Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC December 13, 2012.
28. *"Beta-1 Adrenergic Receptor Genotype Ser49Gly Is Associated with Beta-Blocker Survival Benefit in Patients with Heart Failure"* at the Eshelman School of Pharmacy Graduate Program Retreat, University of North Carolina, Chapel Hill, NC August 20, 2012.
29. *"Pharmacogenetics and Heart Failure Patient Survival"* at the Aab Cardiovascular Research Institute, University of Rochester, Rochester, NY, January 30, 2012.
30. *"Pharmacogenetics and Heart Failure Patient Survival"* at the Division of Clinical Pharmacology, Indiana University School of Medicine, Indianapolis, IN, November 14, 2011.
31. *"Genetic and Pharmacogenetic Associations with Heart Failure Patient Survival"* at Division of Pharmacotherapy and Experimental Therapeutics Seminar, UNC Eshelman School of Pharmacy, Chapel Hill, NC, October 18, 2011.
32. *"Genetic and Pharmacogenetic Associations with Heart Failure Patient Survival"* at Heart Failure Management: Established Therapy and New Frontiers 2011, Amelia Island, FL, July 23, 2011.
33. *"Genetic and Pharmacogenetic Associations with Heart Failure Patient Survival"* Division of Pharmacotherapy and Experimental Therapeutics Seminar and Preliminary Oral Defense, UNC Eshelman School of Pharmacy, Chapel Hill, NC, November 23, 2010.

34. “*Genetic and Pharmacogenetic Associations in Patients with Heart Failure*” at Heart Failure Management: Established Therapy and New Frontiers 2010, Amelia Island, FL, July 17, 2010.
35. “*Genetic and Pharmacogenetic Associations in Patients with Heart Failure*” at Pharmaceutical Sciences Graduate Program Retreat 2010, UNC Eshelman School of Pharmacy, Chapel Hill, NC, May 25, 2010.
36. “*Association of genetic polymorphisms in the sympathetic adrenergic system (SAS) and renin-angiotensin-aldosterone system (RAAS) with mortality in patients with heart failure (HF)*” Division of Pharmacotherapy and Experimental Therapeutics Seminar, UNC Eshelman School of Pharmacy, Chapel Hill, NC, March 2, 2010.
37. “*First-dose and steady-state pharmacokinetics of raltegravir in the genital tract of HIV negative women.*” Division of Pharmacotherapy and Experimental Therapeutics Seminar, UNC Eshelman School of Pharmacy, Chapel Hill, NC, March 3, 2009.

Webinars

Moderator

1. “*Integrated Omics in Heart Failure: Precision Medicine Highlights for Heart Failure Clinicians and Scientists*” at the Heart Failure Society of America Annual Scientific Meeting (Virtual). September 30 – October 6, 2020.

RESEARCH PRESS RELEASES

1. “Dr. Jasmine Luzum Publishes Review of Pharmacogenomics for COVID-19 Therapies” on the University of Michigan College of Pharmacy website on September 3, 2020. URL: <https://pharmacy.umich.edu/about-college/news/category/research-news/dr-jasmine-luzum-publishes-review-pharmacogenomics-covid-19-therapies>
2. (Student Rebekah Mahoney featured in) “*Student researchers shine in Seattle*” on the American Pharmacists Association website on July 23, 2019. URL: <https://pharmacist.com/publications/spm/student-researchers-shine-seattle>
3. “*Dr. Jasmine Luzum Wins Two Research Awards*” on the University of Michigan College of Pharmacy website on September 14, 2018. URL: <https://pharmacy.umich.edu/about-college/news/category/faculty-news/dr-jasmine-luzum-wins-two-research-awards>
4. “*Dr. Jasmine Luzum Earns AACP New Investigator Award*” on the University of Michigan College of Pharmacy website on January 31, 2018. URL:

<https://pharmacy.umich.edu/about-college/news/category/faculty-news/dr-jasmine-luzum-earns-aacp-new-investigator-award>

5. “*American Heart Association Fellow Researches Genetic Markers of Heart Failure Unique to African-Americans*” on the OSU College of Medicine website on August 8, 2014. URL: <http://medicine.osu.edu/news/archive/2014/08/08/american-heart-association-fellow-researches-genetic-markers-of-heart-failure-unique-to-african-americans.aspx>
6. “*Impact Award: Jasmine Talameh Links Beta-Blocker Effectiveness to Genotype*” on the UNC Eshelman School of Pharmacy website on May 7, 2013. URL: <http://pharmacy.unc.edu/impact-award-jasmine-talameh-links-beta-blocker-effectiveness-to-genotype/>
7. “*Doctoral Student Talameh Receives Hadzija Award*” on the UNC Eshelman School of Pharmacy website on April 13, 2012. URL: <https://pharmacy.unc.edu/doctoral-student-talameh-receives-hadzija-award/>
8. “*UNC Analysis Finds Beta1-AR Alleles Impact Survival in Patients Treated with Beta-Blockers*” by Turna Ray in *GenomeWeb Pharmacogenomics Reporter* on March 29, 2012. URL: <http://www.genomeweb.com/mdx/unc-analysis-finds-beta1-ar-alleles-impact-survival-patients-treated-beta-blocke>

PEER REVIEW

(number reviewed or edited)

Guest Editor

Theme: “*Pharmacogenomics of Adverse Drug Reactions*” for
Frontiers in Pharmacology & Frontiers in Genetics (5) 2020

Grants

NIH CICS Study Section (2) 2020
University of Alabama at Birmingham Obesity and Health Disparities Research Center
Pilot Grant Program (1) 2019
University of Michigan Center for Inter-Professional Education 2017
IP-X Research Stimulus Grants (5)
Michigan Institute for Clinical & Health Research Pre-K Award (1) 2017
University of Sharjah Research Fund (1) 2015

Manuscripts

Circulation: Heart Failure (2) 2021
Pharmacotherapy (1) 2020
Clinical and Translational Science (1) 2020
Circulation: Heart Failure (1) 2019
British Journal of Clinical Pharmacology (1) 2019
Pharmacogenomics (1) 2019
Scientific Reports (1) 2019
Pharmacogenetics & Genomics (1) 2018
PLOS One (1) 2018
Clinical Pharmacology & Therapeutics (1) 2018
Circulation: Heart Failure (2) 2017
Therapeutics and Clinical Risk Management (1) 2016
The Pharmacogenomics Journal (1) 2015
American Heart Journal (1) 2015
The Pharmacogenomics Journal (1) 2014
Journal of Pharmacogenomics & Pharmacoproteomics (1) 2014
Journal of Personalized Medicine (1) 2013
Molecular Diagnosis & Therapy (1) 2013
Pharmacotherapy (1) 2012
Clinical Pharmacology & Therapeutics (1) 2012
Circulation: Heart Failure (1) 2011
Circulation Research (1) 2011
Journal of Cardiac Failure (1) 2011
Journal of Cardiac Failure (1) 2009
Pharmacotherapy (1) 2009

Meeting abstracts

American College of Cardiology (20) 2021
American Association of Pharmaceutical Scientists (8) 2015

American Association of Pharmaceutical Scientists (4)	2014
American Association of Pharmaceutical Scientists (19)	2013
American College of Clinical Pharmacy (4)	2012
American Association of Pharmaceutical Scientists (2)	2012
Heart Failure Society of America (38)	2012
American College of Clinical Pharmacy (4)	2012
American Association of Pharmaceutical Scientists (6)	2011
Heart Failure Society of America (37)	2011
American College of Clinical Pharmacy (6)	2010
American Heart Association (17)	2010
Heart Failure Society of America (30)	2010
American Association of Pharmaceutical Scientists (4)	2010
American College of Clinical Pharmacy (3)	2009

PROFESSIONAL DEVELOPMENT IN RESEARCH

American Society of Clinical Pharmacology & Therapeutics Annual Meeting – March 8-12, 2021, virtual

Responsible Conduct of Research Training for K Awardees – April 7, 24, and 29, 2020 *Offered by the Michigan Institute for Clinical & Health Research (MICHR)*

Wellcome Genome Campus Advanced Course - Genetic Analysis of Population-Based Association Studies – September 23-27, 2019, Hinxton, England

American Heart Association Scientific Sessions – November 10-12, 2018, Chicago, IL

American College of Clinical Pharmacy Global Conference – October 20-23, 2018, Seattle, WA

Heart Failure Society of America Annual Meeting – September 15-18, 2018, Nashville, TN

“Media Training: Promote Your Expertise and Research to a Global Audience” – October 11, 2018 *Offered by the University of Michigan ADVANCE Program*

“Precision Medicine World Conference” – June 6-7, 2018, Ann Arbor, MI

“Large-Scale Grants” – May 1, 2018 *Offered by the Michigan Institute for Clinical & Health Research (MICHR)*

“Faculty Leadership in Professional Societies” – January 29, 2018 *Offered by the University of Michigan ADVANCE Program*

“University of Michigan Translational Research Symposium” – October 4, 2017 *Offered by the Michigan Institute for Clinical & Health Research (MICHR)*

“Advancing Precision Medicine Through Complex Systems Biology Symposium”- September 14, 2016 *Offered by the University of Michigan Center for Systems Biology*

“Leadership and Talent Management” – December 2, 2015 *Offered by the Ohio State University Post-Doctoral Association*

American Heart Association Scientific Sessions – November 7-11, 2015 *Orlando, FL*

“Tips for Successful Scientific Writing” – October 30, 2015 *Offered by Nationwide Children’s Hospital*

“Communicating with Impact” – May 14, 2015 *Offered by the Ohio State University College of Medicine*

Pharmacogenomics Research Network (PGRN) Meeting – April 27-29, 2014 *State College, PA*

“Principles of Clinical Pharmacology” - September 4, 2014 to January 22, 2015 *Offered by NIH*

“Introduction to High Performance Computing (Ohio Supercomputer Workshop)” – November 20, 2014 *Offered by the Ohio Supercomputer Center*

“The Role of Health Information Technology and Informatics in Clinical Transformation” – September 3, 2014 *Offered by the Ohio State University Department of Biomedical Informatics*

Pharmacogenomics Research Network (PGRN) Meeting – April 2-3, 2014 *Orlando, FL*

“NHLBI Population Studies Workshop” – July 28-31, 2013 *Offered by the National Heart, Lung, and Blood Institute*

“Being a Principal Investigator at Ohio State” – June 20, 2013 *Offered by the Ohio State University Office of Research*

“Write Winning Career Development Award Proposals” – June 27, 2012 *Offered by the North Carolina Translational and Clinical Sciences Institute*

Duke University Center for Personalized Medicine Symposium – March 29, 2012 *Durham, NC*

American College of Cardiology Scientific Sessions – March 24-27, 2012 *Chicago, IL*

“Dissertation Writing” – January 23-27, 2012 *Offered by the University of North Carolina Writing Center*

“Presenting Data Professionally” - May 5, 2011 *Offered by the North Carolina Translational and Clinical Sciences Institute*

“Writing for Publication” - January 14, 2011 *Offered by the University of North Carolina School of Nursing Center for Lifelong Learning*

Globalization of Pharmaceuticals Education Meeting – November 10-12, 2010 *Chapel Hill, NC*

“Write Winning Grants” – August 6, 2010 *Offered by the North Carolina Translational and Clinical Sciences Institute*

“Grant Writing/Proposal Development” – March 11, 2010 *Offered by the North Carolina Translational and Clinical Sciences Institute*

International Workshop on Clinical Pharmacology of HIV Therapy - April 15-17, 2009
Amsterdam, The Netherlands

American Association of Pharmaceutical Scientists (AAPS) Meeting – November 16-20,
2008 *Atlanta, GA*

TEACHING EXPERIENCE

Clinicians

Clinical Genomics Education Bootcamp Fall 2020

Panelist – American Society for Human Genetics (ASHG) Annual Meeting

- Recorded 1 hour virtual bootcamp on how to teach genomics to clinicians

Pharmacogenomics Journal Club Fall 2016

Facilitator – University of Michigan

- Started, organized, and facilitated a monthly journal club that was open to anyone interested in learning more about pharmacogenomics (e.g., students, faculty, and clinicians). The journal club met monthly for 1 hour. Important articles in the field of pharmacogenomics were presented by expert faculty members and open for questions/discussion.

Continuing Education – Seminar

Instructor – University of Michigan Health System Heart Failure Conference Sep 2016-18

- Taught 1 hour interactive seminar on race and beta-blocker pharmacogenetics to 10 heart failure specialty cardiologists and fellows

Continuing Education - Online Mar 2016

Instructor – Ohio State University Wexner Medical Center and Nationwide Children’s Hospital

- Taught 1 hour online course on “How to Teach Pharmacogenetics/genomics” and wrote 20 exam questions for the Faculty Development for Medical Educators Program (FD4ME)
- Available at: <https://fd4me.osu.edu/modules/69>

BSGP 8800.05 Genomic Medicine and Pharmacogenomics Jun 2015

Instructor – Ohio State University College of Medicine

- Taught 4 physicians in the Signature Program Translational Science Curriculum an interactive 2-hour lesson on “How to Design Clinical Pharmacogenomics Studies”

Continuing Education – Grand Rounds Mar 2015

Instructor – Ohio State University Wexner Medical Center

- Taught 1-hour seminar on cardiovascular pharmacogenetics for continuing medical education for the Department of Cardiology at Ohio State University Wexner Medical Center, with focus on the pharmacogenetic recommendations for clopidogrel, simvastatin, and warfarin

Continuing Education – Conference Jul 2012

Co-Instructor – Heart Failure Management, Amelia Island, FL

- Co-taught 45-minute breakout luncheon workshop, an update on personalized medicine in cardiovascular disease with Mona Fiuzat, PharmD, with a focus on beta-blocker pharmacogenetics in heart failure

Continuing Education – Conference Jul 2011

Co-Instructor – Heart Failure Management, Amelia Island, FL

- Co-taught 45-minute breakout luncheon workshop, an update on personalized medicine in cardiovascular disease with Craig Lee, PharmD and Mona Fiuzat, PharmD, with a focus on beta-blocker pharmacogenetics in heart failure

PhD Students

CPTS850 Clinical Pharmacy Translational Science Seminar Fall 2019

Course Coordinator & Lecturer - University of Michigan College of Pharmacy

- Delivered 45 minute seminar on my research
- Created syllabus and schedule
- Created and managed course website

CP822 Research & Clinical Applications of Pharmacogenomics Winter 2019-Pres

Course Coordinator & Lecturer - University of Michigan College of Pharmacy

- Designed brand new course and 7 lectures for 3 PhD students in Clinical & Translational Pharmaceutical Science
- Created and managed course website

Research Forum Winter 2018

Faculty Leader & Evaluator – University of Michigan College of Pharmacy

- Led group of 6 PharmD students in the review of 4 PhD students research posters for 1.5 hours
- Led group discussion with PharmD students on the review of the 4 PhD students' posters
- Provided feedback to the PhD students on their posters

PHARMCL7550 Research Applications of Clinical Pharmacology Spring 2015

Co-Instructor – Ohio State University College of Medicine

- Adapted tool for evaluation of clinical pharmacology research and grading rubric
- Created and presented an example for thorough evaluation of pharmacology literature

DPET831 Quantitative Methods in Clinical Research Spring 2011

Super Teaching Assistant - University of North Carolina Eshelman School of Pharmacy

- Designed weekly case-based statistical problem for 20-25 graduate students to solve with SAS programming, such as data transformations, descriptive, parametric, and non-parametric statistical approaches used in clinical research
- Facilitated hands-on SAS programming during weekly recitation for 10-15 graduate students
- Integrated scientific writing skills into weekly case reports of SAS statistical output
- Created and completed grading rubrics to provide standardized weekly feedback

Pharmacy Residents & Fellows

Resident Research Series 2017-Present

Guest Instructor – University of Michigan College of Pharmacy

- Taught two 1.5 hour classes on statistics for approximately 30 residents, including a 48-minute recorded lecture, 10-question practice quiz for BCPS exam, 30 minute review of quiz answers using Poll Everywhere, creating a worksheet to determine appropriate statistical test for their research project, and creating a plan for facilitated group discussion of their statistical analysis plan
- Facilitated a 1.5 hour session and group discussion on writing specific aims and hypotheses for their research project

Department of Clinical Pharmacy Fellow Seminar

2016-Present

Guest Instructor - University of Michigan College of Pharmacy

- Attended every 2 hour session and participated in question & answer session after each fellow presented their research, and participated in career development discussion topic
- Facilitated a 1.5 hour session for about 10 fellows and 5 faculty, including a 1-hour practice job talk by one of the fellows, a 20-minute presentation by research administration, and 15-minute interactive presentation on campus resources available and useful for fellows (October 2017)
- Designed and facilitated a 1.5 hour interactive session on mentor-mentee agreements for about 10 fellows and 5 faculty (October 2016)

PharmD Students

Advance Pharmacy Practice Experience (APPE)

April 2020

Co-Preceptor – University of Michigan College of Pharmacy

- Created a video and assignment for COVID-19 Non-traditional APPE

P718 Modern Biopharmaceutics and Pharmacogenomics

Winter 2019-Present

Course Coordinator & Lecturer - University of Michigan College of Pharmacy

- Redesigned one-half semester course on clinical pharmacogenomics for 85 P3 students
- Designed and recorded 2 hours of lecture on cardiovascular pharmacogenetics
- Created and managed course website

P718 Modern Biopharmaceutics and Pharmacogenomics

2017-2018

Guest Judge - University of Michigan College of Pharmacy

- Judged 16 group presentations of 15 minutes each by students showcasing a gene-drug pair using a standardized rubric

P612 Therapeutic Problem Solving

Spring 2018

Skills Evaluator – University of Michigan College of Pharmacy

- Evaluated 12 students on performance of their skills in use of a glucometer and mixing, drawing up, and administering insulin

P730 PharmD Seminar

2017-Present

Advisor - University of Michigan College of Pharmacy

- Develop topics and advise 2 PharmD students per year on the development and delivery of their seminar

- P602 Therapeutic Problem Solving** Fall 2017-18
Patient Simulator & Skills Evaluator - University of Michigan College of Pharmacy
- Served as pretend hypertension patient and evaluator of blood pressure measurement technique for nine P2 PharmD students using grading rubric in ExamSoft
 - Observed, graded and led discussion of three different coronary artery disease patient cases for P2 PharmD students using grading rubric in ExamSoft
- P504 Pharmacy Practice Skills** Fall 2017
Facilitator – University of Michigan College of Pharmacy
- Facilitated and demonstrated blood pressure measurement, blood glucose measurement, and discussion of health professional skills in 3.5 hour session for a small group (n = 6) P1 PharmD students
- P614 Principles of Research and Problem Solving** Spring 2017
Guest Judge - University of Michigan College of Pharmacy
- Judged 5 individual student research poster presentations for 1.5 hours
- P501 Lifelong Learning** Fall 2016
Guest Speaker – University of Michigan College of Pharmacy
- Discussed an academic pharmacy career with a group of 7 students for 1 hour
- PHR7006 Introductory Pharmacy Practice Experience 5** Spring 2014
Facilitator - Ohio State University College of Pharmacy
- Facilitated literature evaluation and discussion for 2 groups of 6-8 PharmD students
 - Completed grading rubric of group to provide standardized, written feedback
- PHCY444 Cardiology/Nephrology** Spring 2013
Clinical Instructor - University of North Carolina Eshelman School of Pharmacy
- Wrote multiple choice exam questions for PharmD student heart failure module
- DPET813 Advanced Cardiovascular Pharmacotherapy** Fall 2009-12
Clinical Instructor - University of North Carolina Eshelman School of Pharmacy
- Assisted in the design of chronic heart failure and pharmacogenomics modules for class size of 30 PharmD students: objectives, patient case, and required readings
 - Facilitated heart failure patient case discussion for groups of 6 PharmD students
 - Designed and delivered 30 minute interactive lecture for pharmacogenomics module with emphasis on clopidogrel and warfarin pharmacogenomics
 - Created clopidogrel and warfarin pharmacogenomics patient cases and questions and facilitated pharmacogenomics case-based discussions for groups of 6 PharmD students
- PHCY446 Neurology/Psychiatry** Spring 2009
Teaching Assistant - University of North Carolina Eshelman School of Pharmacy
- Administered and graded multiple choice examinations for approximately 100 PharmD students

PharmD Student Recitations

Fall 2008-12

Clinical Instructor - University of North Carolina Eshelman School of Pharmacy

- Facilitated multiple 60-minute case-based discussions for groups of approximately 10 PharmD students on the following clinical topics: tobacco cessation, hyperlipidemia, schizophrenia, asthma, malignant pain, sexually transmitted diseases, ischemic heart disease, gastroesophageal reflux disease/peptic ulcer disease, otitis media, and heart failure

PHCY413 Pharmacokinetics

Fall 2008

Teaching Assistant – University of North Carolina Eshelman School of Pharmacy

- Administered and graded multiple choice examinations for about 100 PharmD students

Undergraduate Students

P212 Contemporary Research in the Pharmaceutical Sciences

Winter 2018-Pres

Course Coordinator – University of Michigan

- Designed and coordinated a brand new 1-credit hour course to showcase 13 diverse pharmaceutical researchers from the College of Pharmacy, College of Medicine, pharmaceutical industry, and the FDA
- Created and managed course website
- Collected and graded weekly questions on reading assignments, attendance, participation, and term paper

P200 Science of Medicines

Fall 2017-Present

Guest Lecturer - University of Michigan

- Designed and delivered three 1.5-hour interactive and multimedia lectures on recreational and performance-enhancing drugs for approximately 35 undergraduates
- Innovative teaching strategies included the incorporation of active learning (1 minute papers), technology (Poll Everywhere word clouds and review questions), and multimedia (recorded remote webcam interviews with Olympian PharmD alumni, links to online news articles, and YouTube videos)
- Wrote 15 total quiz questions

PHARM5600 Introduction to General Pharmacology

Fall 2013-

Guest Lecturer – Ohio State University College of Medicine

Spring 2014

- Designed and delivered seven, 30-minute online lectures for 45 students
- Wrote approximately 150 multiple choice and case-based quiz and exam questions
- The online courses can be accessed in Internet Explorer with an OSU login and password:
- Estrogens and Androgens: https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_26/Estrogens_And_Androgens/presentation_html5.html
- Immunosuppressants: https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_41/Immunosuppressants/presentation_html5.html

- The Autonomic Nervous System: [https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_04/The Autonomic Nervous System/presentation_html5.html](https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_04/The_Autonomic_Nervous_System/presentation_html5.html)
- Cholinergic Agonists: [https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_05/Cholinergic Agonists/presentation_html5.html](https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_05/Cholinergic_Agonists/presentation_html5.html)
- Cholinergic Antagonists: [https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_06/Cholinergic Antagonists/presentation_html5.html](https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_06/Cholinergic_Antagonists/presentation_html5.html)
- Adrenergic Agonists: [https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_07/Adrenergic Agonists/presentation_html5.html](https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_07/Adrenergic_Agonists/presentation_html5.html)
- Adrenergic Antagonists: [https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_08/Adrenergic Antagonists/presentation_html5.html](https://macprlessons.org.ohio-state.edu/PHARMCL_5600/Articulate/Module_08/Adrenergic_Antagonists/presentation_html5.html)

CHEM110 General Chemistry I

Fall 2003

Undergrad-Teaching-Undergrads - University of Pittsburgh College of Arts and Sciences

- Assisted course coordinator in design of weekly recitations
- Led weekly recitation with instruction in general chemistry problems for 15 undergraduate students
- Administered and graded weekly quizzes

Interprofessional Education (IPE)

IPE in Action

Fall 2018

Facilitator – University of Michigan

- Facilitated complex patient case discussion with 10 students for 2 hours from the following schools/colleges: medicine, dentistry, social work, public health, nursing, and kinesiology

TEACHING AWARDS

- Boka W. Hadzija Award for Distinguished University Service 2012
 - *Recognizes the single graduate or professional student with the most outstanding character, scholarship, leadership, and service to the University of North Carolina at Chapel Hill*
- Future Faculty Fellowship 2012
 - *A competitive, 5-day course preparing selected graduate students at the University of North Carolina at Chapel Hill for a faculty position*
- Super Teaching Assistant 2011
 - *Graduate students in the University of North Carolina Eshelman School of Pharmacy with outstanding performance as a teaching assistant in their first year*

are selected for this award that provides a more in-depth and independent teaching experience in their second year of graduate school

PROFESSIONAL DEVELOPMENT IN TEACHING

American Association of Colleges of Pharmacy Annual Meeting – July 18-22, 2019 Chicago, IL

“Teaching Workshop” – August 4-5, 2014

Offered by the Ohio State University College of Pharmacy

“Teaching Portfolios” – October 11, 2011

Offered by the University of North Carolina Center for Faculty Excellence

“Classroom Management” – September 16, 2010

Offered by the University of North Carolina Center for Faculty Excellence

“Teaching to Different Levels of Students” – September 8, 2010

Offered by the University of North Carolina Center for Faculty Excellence

MENTORSHIP

Post-Doctoral Fellows

Alessandra Campos-Staffico, RPh, PhD

2020-present

University of Michigan College of Pharmacy, Ann Arbor, MI

“Prevalence of discordant drug recommendations in atherosclerotic cardiovascular disease risk estimators”

“Clinical outcomes of different atherosclerotic cardiovascular disease risk estimators”

“Genome-wide association study of bleeding risk on DOACs”

Tyler Shugg, PharmD, PhD

2018-2019

University of Michigan College of Pharmacy, Ann Arbor, MI

“Identification of Sex Hormone Homeostasis Genetic Predictors of the QT Interval: Implications for Personalized Medicine” and

“Precision Medicine for Chemotherapy-Induced Cardiotoxicity: A Pharmacogenetic Investigation of Carvedilol”

Masters in Public Health Capstone Project

2020-present

Jonathan Kim

“Association of genetic polymorphisms in CYP3A5 with bleeding risk on DOACs”

PhD Student Rotations

Ozioma Edokobi

2020

“Comparison of Survival Benefit from Angiotensin Inhibitors in Patients with Self-Reported Black & White Race in the GUIDE-IT trial”

Logan Smith

2019

“Comparison of pharmacogenetic results from candidate gene studies versus GWAS”

Ciao-Sin “Chelsea” Chen

2019

“Machine learning to develop decision trees for managing statin-associated muscle symptoms”

Ana Lopez Medina 2019

“Pharmacogenetics of drug-induced QT prolongation”

Honors Biology Project

2019

Lydia Schiopota – Aurora High School, Aurora, OH

“Scientists Classify and Understand the Risks of Genetically Modified Organisms”

MICHR Summer Immersion Research Program

Ozioma Edokobi, BS – University of Michigan College of Pharmacy 2020

“A Comparison of the Response to Angiotensin Inhibitors in Black and White Patients with Heart Failure and Reduced Ejection Fraction”

Joseph English, BS – University of Michigan College of Pharmacy 2018

“Association of Genetic Polymorphisms in the Beta-1 Adrenergic Receptor with Recovery of Left Ventricular Ejection Fraction in Patients with Heart Failure”

“Precision Medicine for Chemotherapy-Induced Cardiotoxicity: A Pharmacogenetic Investigation of Carvedilol”

Residency Research Projects

2017 - 2019

Christopher Ting, MD – Henry Ford Health System Internal Medicine Residency Class of 2019, Detroit, MI *“A Cardiac-Specific Regulatory Genetic Variant for Protein Kinase C α is Significantly Associated with Mortality in Patients with Heart Failure”*

Bradley Kay, MD – University of Michigan Internal Medicine Residency Class of 2018, Ann Arbor, MI *“Precision Medicine for Chemotherapy-Induced Cardiotoxicity: A Pharmacogenetic Investigation of Carvedilol”*

Daniel Perry, MD – University of Michigan Internal Medicine Residency Class of 2019 Ann Arbor, MI *“Precision Medicine for Chemotherapy-Induced Cardiotoxicity: A Pharmacogenetic Investigation of Carvedilol”* and *“Atorvastatin may be Associated with a Lower Risk of Discontinuation due to Muscle Pain and/or Weakness Compared with Other Statins”*

Pharmacy “Phamily”

2017 – Present

University of Michigan College of Pharmacy - Ann Arbor, MI

Meiyan Kailainathan, Class of 2024

Sun Min (Sunny) Jung, Class of 2023

Bayan Chbib, Class of 2023

Siyu Liu, Class of 2022

Devon Stonerock, Class of 2021

Brandon Holbrook, Class of 2020

Crystal Sun Lee, Class of 2020

Naba Khan, Class of 2019

Anthony Patros, Class of 2018

- Biannual review and one-on-one discussion of students' CV's, short-term and long-term SMART goals, and extracurricular activities

PharmD Student Investigation Research Projects

2017 – Present

University of Michigan College of Pharmacy - Ann Arbor, MI

Kim (Tk) Nguyen, Class of 2023

*"Interaction of CYP2D6*4 with beta-blocker benefit in the recovery of anthracycline-induced cardiomyopathy"*

Jared Shinnars, Class of 2023

"Percentage of patients reported statin-associated muscle symptoms that continue to take statins"

Derek Linskey, Class of 2021

"Association of genetic polymorphisms with myopathy caused by atorvastatin"

Joseph English, Class of 2021

"Association of ABCG4 with statin association muscle symptoms"

Wilson Chen, Class of 2021

"Comparison of changes in statin therapy in patients with and without statin-associated muscle symptoms"

Rebekah Mahoney, Class of 2020

"An Evaluation of Drug-Drug Interactions Associated with Statin-Induced Myopathy"

Melinda Cook, Class of 2020

"Evaluation of beta-blocker dose response in African-Americans"

PharmD Student Seminars

2017 – Present

University of Michigan College of Pharmacy - Ann Arbor, MI

Ana Lopez Medina, Class of 2022

"Addressing Social Determinants of Health in the Care of Patients With Heart Failure"

Andrew Barish, Class of 2022

"Race versus Ancestry in Cardiovascular Drug Response"

Anthony Mack, Class of 2021

"Polygenic Scores in Pharmacogenetics"

Derek Linskey, Class of 2021

"Association of genetic polymorphisms with myopathy caused by atorvastatin"

Wilson Chen, Class of 2021

“Does Coenzyme Q10 Relieve Statin Associated Muscle Symptoms?”

Rebekah Mahoney, Class of 2020

“Machine Learning to Discover Novel Drug-Drug Interactions Associated With Statin Associated Muscle Symptoms”

Alex Smith, Class of 2020

“Pharmacogenomic GWAS: Where are we now?”

Ming-Hei Tai, Class of 2019

“Why are there no effective drugs to treat heart failure with preserved ejection fraction? A Story of Failure.”

Bianca London, Class of 2019

“Inconsistencies Among Clinical Recommendations for Pharmacogenetics: What is a Pharmacist To Do?!”

Jason Cheung, Class of 2018

“Clinical Controversy: Do Cardiologists Require Higher Standards of Evidence for Pharmacogenetics than Other Specialties?”

Pauline Kim, Class of 2018

“Clinical Controversy: Are Pharmacogenetic Tests Held to a Higher Standard than Other Clinical Tests?”

Latino & Latin American Space for Enrichment and Research (LASER) 2014
Ohio State University College of Pharmacy – Columbus, OH

Ariela Lopez, Class of 2017

- Provided one-on-one monthly mentoring for a pre-pharmacy undergraduate major on pre-pharmacy coursework, pharmacy school application process, preparation for the pharmacy college admission examination, and research and internship opportunities

CLINICAL EXPERIENCE

Clinical Pharmacy

Ohio State University Outpatient Heart Failure Clinic

2014-2016

Clinical Pharmacist - Columbus, OH

- Discussed with heart failure team whether patients are receiving optimal, heart failure guideline recommended therapies
- Recommended to heart failure team the presence and resolution of drug-related problems, such as untreated indications, improper drug or dose selection, adverse drug reactions, drug-drug interactions, drug-food interactions, drug treatment without indication, cost efficiency, non-adherence, and access to medications

University of North Carolina Outpatient Heart Failure Clinic

2010-2012

Clinical Pharmacist – Chapel Hill, NC

- Ensured patients are receiving optimal, heart failure guideline recommended therapies
- Identified and resolved drug-related problems, such as untreated indications, improper drug or dose selection, adverse drug reactions, drug-drug interactions, drug-food interactions, drug treatment without indication, cost efficiency, non-adherence, and access to medications
- Consolidated home medication regimen, non-prescription medications, and drug allergies in the electronic medical record
- Assessed heart failure symptoms and recommended changes to diuretic therapy if necessary
- Monitored lab values and patient for drug efficacy and toxicity
- Educated patients and heart failure team regarding complexities of drug therapy

University of North Carolina Inpatient Heart Failure Service

2010-2011

Clinical Pharmacist – Chapel Hill, NC

- Rounded with heart failure team to identify and resolve drug-related problems
- Performed medication reconciliation at admission, discharge, and during hospitalization to minimize medication errors
- Performed therapeutic drug monitoring, *i.e.* with inotropes and pulmonary artery catheterization and vancomycin or digoxin dosing and plasma concentrations

University of North Carolina Inpatient General Cardiology Service

2009

Clinical Pharmacist– Chapel Hill, NC

- Rounded with cardiology team to identify and resolve drug-related problems
- Educated patients on medication regimens, especially those starting warfarin therapy

Southwest General Hospital General Cardiology Service

2008

Student Pharmacist - Middleburg Heights, OH

- Rounded with cardiology team to identify and resolve drug-related problems
- Educated patients on medication regimens, especially those starting warfarin therapy

Cuyahoga Falls Hospital Pain Management Clinic 2008

Student Pharmacist – Cuyahoga Falls, OH

- Designed and monitored pain medication regimens in collaboration with health care team
- Monitored and educated patients on abuse and misuse of pain medications

University of Pittsburgh Medical Center Infectious Disease Service 2007

Student Pharmacist – Pittsburgh, PA

- Rounded with infectious disease team to identify antibiotic related problems
- Monitored antibiotic efficacy, toxicity, and drug interactions

Community Pharmacy

Nationwide Children’s Hospital Outpatient Pharmacy 2013-2015

Pharmacist - Columbus, OH

- Reviewed prescriptions for accuracy and appropriateness of drug and dosing based on the child’s weight, age, indication, concomitant medications, and body surface area where necessary, drug-drug interactions, drug-food interactions, allergies, and cost efficiency
- Counseled patients and parents on the proper use and adherence to medications
- Supervised and educated pharmacist interns, especially in compounding medications to pediatric dosage forms

Wal-Mart Pharmacy 2008-2016

Pharmacist - Durham, NC and Columbus, OH

- Provided medication therapy management and immunizations
- Reviewed prescriptions for accuracy and drug-related problems
- Counseled patients on proper use of medications, adherence, indication, and adverse reactions
- Resolved third party payment issues
- Maintained drug inventory

Inter-Faith Council Homeless Shelter Clinic 2010

Volunteer Pharmacist – Chapel Hill, NC

- Collaborated with nurse practitioner to identify free medications available to treat patients’ indications
- Dispensed and counseled on free medications

Hometown Pharmacy 2007-2008

Pharmacist Intern – West Mifflin, PA

- Filled and counseled prescriptions
- Contacted prescribers to verify prescription accuracy and recommend changes
- Performed blood pressure screenings

CVS Pharmacy

Student Pharmacist – Pittsburgh, PA 2007

- Filled, dispensed, and counseled prescriptions

Rite Aid Pharmacy

Student Pharmacist – Washington, DC 2007

- Filled, dispensed, and counseled prescriptions

Birmingham Free Clinic

Volunteer Student Pharmacist – Pittsburgh, PA 2007

- Interviewed patients with medical students for potential indications for free medications
- Dispensed and counseled on free medications

Mail Order Pharmacy

Medco Health Solutions, Inc. – North Versailles, PA 2005

Pharmacist Intern

- Entered prescriptions into electronic prescription system
- Performed various research projects and reports, such as evidence for allowing switching between manufacturers for narrow therapeutic index drugs
- Educated pharmacy staff with “lunch and learn” seminar

Consulting

DalCor Pharmaceuticals – San Mateo, CA 2018

Scientific Advisor

- Discussed clinical implementation of pharmacogenetic testing for the CETP inhibitor dalcetrapib

L.E.K. Consulting – San Francisco, CA 2017

Pharmacogenomics Consultant

- Discussed clinical implementation of pharmacogenetics

Gnome Diagnostics, LLC. – Powell, OH 2014-Present

Clinical Consultant

- Evaluated and interpreted pharmacogenetic test reports
- Educated clinicians on pharmacogenetic testing

LICENSURE & CERTIFICATIONS

Research Study Coordinator 2018-Present

University of Michigan

Board Certified Pharmacotherapy Specialist (BCPS) 2015-Present

Board of Pharmacy Specialties

Applied Pharmacology <i>American Board of Clinical Pharmacology</i>	2015-Present
Immunizing Pharmacist <i>American Pharmacists Association</i>	2015-2016
Basic Life Support (CPR & AED) <i>American Heart Association</i>	2015-2016
Registered Pharmacist <i>Ohio license # 03132402-1</i> <i>North Carolina license #19956</i>	2012-2016 2008-Present

CLINICAL PRESS RELEASES

“Genotyping Test May Reduce Myopathy Risk” by George Ochoa in the October 2013 issue of *Pharmacy Practice News*. URL:
http://www.pharmacypracticenews.com/ViewArticle.aspx?d=Clinical&d_id=50&i=October+2013&i_id=1006&a_id=24258

CLINICAL CONFERENCES

Heart Failure Management – July 2012
Amelia Island, FL

Heart Failure Management – July 2011
Amelia Island, FL

Heart Failure Management – July 2010
Amelia Island, FL

American Pharmacists Association – March 2008
San Diego, CA

PROFESSIONAL ORGANIZATIONS

IGNITE (Implementing Genomics in Practice) Network	2021-Present
American Society of Health-System Pharmacists	2021-Present
American Society of Clinical Pharmacology & Therapeutics	2018-Present
Biomarkers and Translational Tools Steering Committee	2020-Present
American College of Clinical Pharmacy	2017-Present
American Association of Colleges of Pharmacy	2016-Present
Heart Failure Society of America	2016-Present
Publications & Scientific Statements Committee	2019-Present
Pharmacogenomics Research Network (PGRN)	2013-Present
Founding Member	2020
Translational Pharmacogenetics Project (TPP)	2013-2016
Expression Genetics in Drug Therapy (XGEN)	2013-2016
Clinical Pharmacogenetics Implementation Consortium (CPIC)	2013-Present
American Heart Association	2013-Present
Leadership Committee	2019-Present
for the Council on Genomics and Precision Medicine	
Diversity Champion	2019-Present
for the Council on Genomics and Precision Medicine	
Council Operations Committee Diversity Subcommittee	2020-Present
Data Science & Precision Medicine Science Subcommittee	2020
Professional & Public Education & Publications Committee	2020-Present
Ohio State University Post-Doctoral Association	2013-2016
NIH Student Loan Repayment Program Ambassador Network	2011-Present
University of North Carolina Eshelman School of Pharmacy Recruitment Ambassador Program	2010-2012
Elected position: Lead PhD Recruitment Ambassador	
Graduate Student Organization at the University of North Carolina Eshelman School of Pharmacy	2008-2012
Elected position: Senator	
Graduate and Professional Student Federation at the University of North Carolina	2008-2012
Society for Neuroscience	2006
Rho Chi National Pharmacy Honor Society	2005-2008
Lambda Kappa Sigma Pharmaceutical Fraternity	2004-2011
Elected position: Recruitment Chair	

Elected position: Vice President

American Association of Pharmaceutical Scientists	2004-2010
American Pharmacists Association	2004-2008
Order of Omega Greek Leadership Honor Society	2004-2005
Kappa Delta Sorority	2003-2008

Elected position: Guard

ACADEMIC AWARDS

- Women in Leadership Panel University of Michigan College of Pharmacy 2017-2019
- Teva Pharmaceuticals Outstanding Student Award 2008
- Lambda Kappa Sigma Mission Sister Award 2007
- Pennsylvania Chain Drug Endowment Scholarship 2006
- Pennsylvania Chain Drug Endowment Scholarship 2005
- Frank Miller Coad Memorial Scholarship 2004
- Dean's List, University of Pittsburgh School of Pharmacy 2004-2008
- Dean's List, University of Pittsburgh College of Arts and Sciences 2002-2004
- University of Pittsburgh Academic Scholarship 2002-2006
- Phi Beta Kappa Award 2002
- Virginia Perryman Award in College Freshman Writing 2002

ACADEMIC PROFESSIONAL DEVELOPMENT

"Strategies for Surviving and Thriving when Working from Home During a Global Pandemic" – January 28, 2021 Offered by the University of Michigan Institute for Health Policy and Implementation

"Self Care During Times of Transition" – January 25, 2021 Offered by the University of Michigan Faculty and Staff Counseling and Consultation Office (FASCCO)

"Shoulda, Woulda, Coulda: Moving Beyond Failure and Actively Cultivating a More Equitable Academy" – November 17, 2020 Offered by the University of Michigan ADVANCE Program

"Essential Skills for Successful Leadership in the Research Setting" – October 27, 2020 Offered by the University of Michigan Office of Faculty Affairs & Faculty Development

"Microaggressions: A Workshop" – March 2, 2020 Offered by the University of Michigan College of Pharmacy

"American Heart Association Council Operations Committee Diversity Summit" – December 3, 2019 Dallas, TX

"American Association of Colleges of Pharmacy Annual Meeting" – July 13-17, 2019 Chicago, IL, USA

"Effective Communication and Conflict Resolution" – June 5, 2019 Offered by Beyond Interactive Training, LLC

"Workshop on Recruiting Faculty for Diversity and Excellence" – November 28, 2018

Offered by the University of Michigan STRIDE Committee (Strategies and Tactics for Recruiting to Improve Diversity and Excellence)

“Unconscious Bias & Facilitating Diversity, Equity, and Inclusion Discussions” – June 8, 2017
Offered by the University of Michigan DEI Education and Training Office for Health Equity and Inclusion

“Salary Negotiations” – May 11, 2015 *Offered by the OSU Post-Doctoral Association*

“Strategies for Success: Key Ways for Enhancing Your Professional Style” – February 19, 2015 *Offered by the OSU Post-Doctoral Association*

“Vitae and Cover Letters” – September 15, 2014
Offered by the OSU Career Counseling and Support Services

“Preparing for the Academic Job Search” – September 8, 2014
Offered by the OSU University Center for the Advancement of Teaching

“Post-doc to Professorship” – January 27, 2014
Offered by the OSU Postdoc Association

“Finding Your Faculty Niche” – January 15, 2014
Offered by the OSU Professional Development Series for Women Faculty

“Building a National Reputation as a Clinician” – January 13, 2014
Offered by the OSU Center for Faculty Advancement, Mentoring, and Engagement

“How to Be a More Successful Writer” – December 4, 2013
Offered by the OSU Postdoc Association

“Future Faculty Fellowship Program” – May 7-11, 2012
Offered by the UNC Center for Faculty Excellence

ACADEMIC PRESS RELEASES

“Jasmine Talameh earns second doctorate, this time from Univ. of N.C.” in the Record-Courier on May 30, 2013. URL: <http://recordpub.com/lifetimes/2013/05/30/jasmine-talameh-earns-2nd-doctorate>

ACADEMIC SERVICE

National

Professional/Public Education & Publications Committee 2020-present
Member – American Heart Association of the Council on Genomic and Precision Medicine

Steering Committee of Biomarkers and Translational Tools (BTT) Community <i>Member</i> – American Society for Clinical Pharmacology & Therapeutics	2020-present
Early Career Committee <i>Member</i> – American Heart Association Council on Genomic and Precision Medicine	2018-present
Publications & Scientific Statements Committee <i>Member</i> – Heart Failure Society of America	2018-2020
Chalmers Award Committee <i>Member</i> – American Association of Colleges of Pharmacy	2017
<ul style="list-style-type: none">Reviewed dossiers for 5 candidates for the 2018 AACP Robert K. Chalmers Distinguished Pharmacy Educator Award	

Campus

Research Forum <i>University of Michigan College of Pharmacy</i>	2018
<ul style="list-style-type: none">Led discussion of potential research projects for pharmacy students at P1 networking session	
PhD Admissions Committee <i>Member</i> – University of Michigan College of Pharmacy Department of Clinical Pharmacy	2017-present
<ul style="list-style-type: none">Work with Student Affairs Program Manager and co-members to create plan for application process to new PhD program in department	
PharmD Admissions Committee <i>Member</i> - University of Michigan College of Pharmacy	2017-present
<ul style="list-style-type: none">Review the applications and interview reports for PharmD program applicants to inform vote to admit/defer/reject for admission to PharmD programReview PharmD program applications and provide comments to inform vote to admit, defer, or reject an invitation to interviewCo-interview PharmD program applicants with a current PharmD student and evaluate the applicant using a standardized rubric on general interview questions and a standardized situational questionRe-review applicants (applications and interview reports) that were deferred for admission post-interview to reassess and recommend for admissionReview applications to waive prerequisite requirementsReview and revise documents for accreditation standards related to admissions	
Phi Delta Chi Diag Takeover <i>University of Michigan College of Pharmacy</i>	2017
<ul style="list-style-type: none">Served as preceptor in the University of Michigan “diag” for 4 PharmD students speaking to the public about the opioid epidemic, pharmacy as a career, and common drug-alcohol interactions for college students	

Search Committee for Clinical Instructor in Pharmacogenomics Implementation <i>Member</i> – University of Michigan College of Pharmacy	2017
Student Affairs Committee <i>Member</i> – University of Michigan College of Pharmacy	2016-present
Student Society of Health-System Pharmacists Mock Interview Event <i>Interviewer</i> – Ohio State University College of Pharmacy	2014
Denman Undergraduate Research Forum <i>Poster Judge</i> – Ohio State University	2014
University of North Carolina Alumni Pharmaceutical Science Mentoring Program <i>Mentor</i> – Ohio State University	2014
Reorganization of the Office of Student Affairs <i>Student Representative</i> – University of North Carolina Eshelman School of Pharmacy	2012
Strategic Plan Student Review Committee <i>Member</i> - University of North Carolina Eshelman School of Pharmacy	2011
Graduate and Professional Student Federation <i>Senator</i> - University of North Carolina	2011-2012
Recruitment Ambassador Program <i>Lead PhD Ambassador</i> - University of North Carolina Eshelman School of Pharmacy	2011-2012
Recruitment Ambassador Program <i>PhD Ambassador</i> - University of North Carolina Eshelman School of Pharmacy	2010-2011
Pre-Graduate Education Advisory Panel <i>Member</i> - University of North Carolina	2010-2011
Pharmaceutical Sciences Recruitment Weekend Student Host <i>Host</i> - University of North Carolina Eshelman School of Pharmacy	2009
Biochemistry and Anatomy & Physiology Tutoring Program <i>Tutor</i> – University of Pittsburgh School of Pharmacy	2006
Undergrad-Teaching-Undergrads Program <i>Student Teacher</i> – University of Pittsburgh College of Arts & Sciences	2003